205

Begin

Reel #507

Shenderov, BA.

SHUB, G.M.; SHEMDERCV. E.A.

Catalase and peroxidase activity of typhoid fever bacteria sensitive and resistant to levomycin. Antibiotiki 8 no.1: 69-71 Ja'63. (MIRA 16:6)

1. Kafedra mikrobiologii (zav. - prof. S.I.Sherishorina) Saratovskogo gosudarstvennogo meditsinskogo instituta.
(CATALASE) (PEROXIDASES) (SALMONELLA)
(LEVOMYCETIN)

SHERISHORINA, S.I.; SHUB, G.M.; SHENDEROV, B.A.

Effect of levomycetin and some chemotherapeutic compounds on the activity of dehydrogenases in dysentery bacilli. Antibiotiki 9 no.12: 1066-1070 D '64. (MIRA 18:7)

1. Kafedra mikrobiologii (zav. - prof. S.I.Sherishorina) Saratovskogo meditsinskogo instituta.

MIKHAYLOV, V.V.; POPOV, I.P.; SHENDEROV, B.L.

Treatment of chronic alcoholism in the psychoneurological infirmary. Vop. psikh, i nevr. no.5:5-10 '59. (MIRA 14:5)

1. Iz Leningradskoy psikhonevrologicheskoy bol'nitsy No.4 (glavnyy vrach T.K.Arikhbayeva, nauchnyy rukovoditel' - dotsent M.M.Mirskaya).
(ALCOHOLISM)

SHENDEROV, G.S.

Comparative evaluation of electrocardiograms taken repeatedly during the day. Klin.med., Moskva 29 no.2:40-44 Feb 51. (CIML 20:7)

1. Of the Hospital Therapeutic Clinic (Director--Prof. A.S. Voronov), Rostov-on-the-Don Medical Institute, Rostov-on-the-Don.

LEONTYEVA, L. P., SHENDEROV, L. A.

Myotonic reaction of the pupil following alcoholization of the second branch of the trigeminal nerve. Vest. oft. 29:6, Nov.-Dec. 50. p. 34-5

CIML 20, 3, March 1951

LEVINA, L. S.; SHENDEROV, L. A.

Modification of intraocular pressure in organic diseases of the nervous system. Uchen. zapski vtor. moskov. med. Inst. Stalina 1: 75-79 1951. (CLML 21:3)

1. Docents. 2. Clinic for Nervous Diseases (Director — Prof. A. M. Grinshteyn, Active Member AMS USSR) of the Therapeutic Faculty and Clinic for Eye Diseases (Director — Prof. N. A. Pletneva).

AKIMENKO, A.D., kand. tekhn. nauk; MAKUSHIN, A.M., inzh. SKVORTSOV, A.A., kand. tekhn. nauk; KHRIPKOV, A.V., inzh. ; SHENDEROV, L.B., inzh.

Combined secondary cooling of a continuously cast ingot. Stal' 18 no. 6:509-511 Je '58. (MIRA 11:7)

1. Gor'kovskiy politekhnicheskiy institut i zavod "Krasnoye Sormovo."
(Steel ingots--Cooling)

PHASE I BOOK EXPLOITATION SOV/5383

Anatoliy Dmitriyevich Akimenko, Konstantin Petrovich Korotkov, Nikolay Pavlovich Mayorov, Aleksey Anatol'yevich Skvortsov, and Lev Borisovich Shenderov

Osvoyeniye nepreryvnoy razlivki stali (Mastering the Process of Continuous Steel Casting) Leningrad, Sudpromgiz, 1960. 225 p. 3,700 copies printed.

Scientific Ed.: G.V. Malakhovskiy; Ed.: M.A. Aptekman; Tech. Ed.: R.K. Tsal.

PURPOSE: This book is intended for designers and process engineers of continuous steel-casting plants and for staff members of scientific research organizations engaged in the investigation of the continuous casting process. It may also be used by students specializing in this field of metallurgy.

COVERAGE: The authors discuss results of experience in setting up and putting into operation the first industrial plant for continuous casting of steel at the "Krasnoye Sormovo" Works. Attention is also given to an investigation of the continuous casting process and to the design of the second continuous steel-casting plant which is now under construction at the same works. In 1958 a group of staff members of the Novotul'skiy and Sormovo Works, (G.V. Gurskiy, M.D. Gritsun, V.A. Kazanskiy, N.L. Komandin, K.P. Korotkov, N.P. Mayorov,

Card 1/4

N.N. Smel'yakov, and A.V. Khripkov), headed by Academician I.P. Baradin, were awarded the title of Laureate of Lenin's Prize for their work in mastering the continuous steel-casting process. Staff members of the TsNIIChM (Central Scientific Research Institute of Ferrous Metallurgy), the Scientific Research Institute of the former Ministry of the Shipbuilding Industry, the VNIIavtogen (All-Union Scientific Research Institute of the Autogenous Treatment of Metals), and other organizations took an active part in the investigation of the continuous casting process. Heat emission and solidification processes were investigated by the Gor'kiy politekhnicheskiy institut (Gor'kiy Polytechnic Institute). There are 54 references: 52 Soviet, 1 English, and 1 German.

TABLE OF CONTENTS:

SHENDEROV, S.M. (Moskva)

Role of the renoprivic factor in the pathogenesis of hypertension. Pat.fiziol. i eksp. terap. 5 no.3:42-46 My-Je '61. (MIRA 14:6)

1. Iz TSentral'nogo instituta usovershenstvovaniya vrachey (dir. - M.D.Kovrigina; nauchnyy rukovoditel' - deystvitel'nyy chlen AMN SSSR prof. V.V.Parin).
(HYPERTENSION) (KIDNEYS)

SHEIDEROV, S.M.

Prolongation of life in nephrectomized rabbits by means of peritoneal dialysis. Biul. eksp. biol. i med. 53 no.2:125-127 F '62. (MIRA 15:3)

1. Iz Instituta normal'noy i patologicheskoy fiziologii (dir. - deystvitel'nyy chlen AMN SSSR prof. V.V. Parin) AMN SSSR, Moskva. Predstavlena deystvitel'nym chlenom AMN SSSR, V.V. Parinym.

(KIDNEYS--SURGERY)
(DIALYSIS)
(PERITONEUM--SURGERY)

PARIN, V.V.; SHENDEROV, S.M.

The significance of disturbances of the metabolic anti-hypertensive function of the kidney in the pathogenesis of hypertension. Gor Vasa 4 no.1:1-11 '62.

1. The Laboratory of Cardiac Physiology and Pathophysiology of the Institute of Normal and Pathological Physiology, Academy of Medical Sciences, Moscow.
(HYPERTENSION etiol) (KIDNEY physiol)
(NEPHRECTOMY exper)

MEYERSON, F.Z.; MIKAYELYAN, A.L.; SHENDEROV, S.M.; MARKOVSKAYA, G.I.

Dynamics of stress in the myocardium in compensatory hyperfunction and insufficiency of the heart from overwork. Zhur. eksp. i klin. med. 3 no.4:13-23 '63. (MIRA 16:12)

1. Institut normal'noy i patologicheskoy fiziologii AMN SSSR i Institut kardiologii i serdechnoy khirurgii AN Armyanskoy SSR.

BAKLI, N.M. [Buckley, N.M.]; MEYERSON, F.Z. [Meerson, F.Z.]; POGOSYAN, L.A.; SHENDEROV, S.M.

Effect of nucleosides, strophanthin and combinations of these factors on the development of the process of fatigue in the myocardium. Biul.eksp.biol.i med. 57 no.5:27-31 My '64. (MIRA 18:2)

1. Otdel fiziologii meditsinskogo kolledzha Al'berta Eynshteyna Universiteta Yashiva, N'yu-York i laboratoriya fiziologii i patologii miokarda Instituta normal'noy i patologicheskoy fiziologii AMN SSSR, Moskva. Submitted January 17, 1964.

PARIN, Vasiliy Vasil'yevich; MAYERSON, Feliks Zal'manovich; [illegible], S.A., red.

[Studies on the clinical physiology of blood circulation] Ocherki klinicheskoi fiziologii krovoobrashcheniia. Moskva, Meditsina, 1965. 479 p. (MIRA 18:8)

FEL'DMAN, S.B.; MEYERSON, F.Z.; MARKOVSKAYA, G.I.; SHEREshOV, S.M.; KHIL'KIN, A.M.

Comparative studies on the duration of systolic phases and intracardiac hemodynamics in progressive experimental aortic diseases. Kardiologiia 5 no.2:28-31 Mr-Ap '65. (MIRA 18:7)

1. Propedevticheskaya terapevticheskaya klinika (zav. - deystvitel'nyy chlen AMN SSSR prof. V.Kh.Vasilenko) I Moskovskogo meditsinskogo instituta imeni I.M.Sechenova i laboratoriya fiziologii i patologii serdtsa Instituta normal'noy i patologicheskoy fiziologii (direktor - deystvitel'nyy chlen AMN SSSR prof. V.V.Parin) AMN SSSR.

KAL'YANOV, V.A.; SHENDEROV, V.Z.

Use of an electron commutator in checking the identity of seismic amplifiers. Razved. i prom. geofiz. no.28:34-37 '63 (MIRA 18:1)

SHENDEROV, Ye.L. (Leningrad)

Diffraction of a cylindrical sound wave on a cylinder. Akust. zhur. 7 no.3:370-374 '61. (MIRA 14:9)
(Sound waves) (Diffraction)

SHENDEROV, Ye.L. (Leningrad)

Passage of a sound wave through an elastic cylindrical shell.
Akust. zhur. 9 no.2:222-230 '63. (MIRA 16:4)

(Sound waves) (Elastic plates and shells)

ACCESSION NR: AP3005633 S/0046/63/009/003/0388/0390

AUTHOR: Shenderov, Ye. L. (Leningrad)

TITLE: Sound radiation by a system of sources through an elastic cylindrical shell

SOURCE: Akusticheskiy zhurnal, v. 9, no. 3, 1963, 388-390

TOPIC TAGS: sound radiation, system of sources, elastic cylindrical shell, plane sound wave, inverse problem, sound wave passage, discrete source, continuous source, boundary value problem, incident wave, duality theorem, duality principle, radiation field, sound pressure

ABSTRACT: The author uses a duality principle which enables him to determine the radiation field of an arbitrary system of sources surrounded by an elastic shell when the solution of the direct problem of passage of a plane sound wave through a cylindrical shell is known. As an example he computes the sound pressure outside a cylindrical shell created by a system of sources uniformly distributed along a rectilinear segment of length $2r_0$ lying in a plane perpendicular to the axis of the shell and passing through the center of a section. "The author expresses his gratitude to L. M. Lyamshev for his guidance with the work." Orig. art. has: 4

Card 1/2

ACCESSION NR: AP3005633

formulas and 1 graph.

ASSOCIATION: none

SUBMITTED: 28Mar63 DATE ACQ: 27Aug63 ENCL: 00

SUB CODE: PH NO REF SOV: 002 OTHER: 000

Card 2/2

ACCESSION NR: AP4039284 S/0046/64/010/002/0229/0233

AUTHOR: Shenderov, Ye. L. (Leningrad)

TITLE: Transmission of sound through thin plates with support

SOURCE: Akusticheskiy zhurnal, v. 10, no. 2, 1964, 229-233

TOPIC TAGS: sound transmission, elastic plate, successive approximation, radiation impedance, vibration mode, transmission coefficient, convergence

ABSTRACT: The sound transmission coefficient through thin elastic plates (fixed by supports at periodic intervals) has been calculated. The transmission coefficient is defined by $B = \frac{\rho c}{2\cos\theta}\sum_{m=1}^{\infty} a_m(\sin\theta) b_m$, the coefficients b_m are determined from an infinite set of linear algebraic equations given by

$$z_m b_m + \sum_{n=1}^{\infty} z_{mn} b_n = a_m, \quad m = 1, 2, \ldots, \text{ where } z_{mn} = \frac{\rho c}{2}\sum_{r=-\infty}^{\infty}\frac{a_m(\mu_r)\bar{a}_n(\mu_r)}{\sqrt{1-\mu_r^2}}, \quad \mu_r = \frac{2\pi r}{\mu} - \sin\theta.$$

The solution is given by the method of successive approximations where the radiation impedance between interacting vibration forms has been neglected. The convergence

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ACCESSION NR: AP4039284

of the successive approximation scheme is proved, and numerical results are obtained for the transmission coefficient and radiation impedance, with and without interaction between various vibration modes, at normal and tangential sound wave incidence. "The author is grateful to L. M. Lyamshev for his help in this work and to Yu. V. Khizhinskaya for programming and carrying out the numerical computations." Orig. art. has: 6 formulas and 6 figures.

ASSOCIATION: none

SUBMITTED: 08Sep63

DATE ACQ: 12Jun64

ENCL: 00

SUB CODE: GP

NO REF SOV: 004

OTHER: 000

Card 2/2

Diffraction of sound by slits in a screen of finite thickness. Akust. zhur. 10 no.3:359-367 '64.

(MIRA 17:11)

L 8807-65 EWT(1) ASD(f)/AFMD(t)/ASD(a)-5/AFWL/ESD(c)/ESD(gs)/ESD(t)/
ACCESSION NR: AP4044620 RAEM(t) S/0046/64/010/003/0359/0367

AUTHOR: Shenderov, Ye. L. (Leningrad)

TITLE: The diffraction of sound by apertures in a finitely thick screen

SOURCE: Akusticheskiy zhurnal, v. 10, no. 3, 1964, 359-367

TOPIC TAGS: acoustics, sound diffraction, sound reflection coefficient, wave scattering, obliquely incident wave, wave transmission coefficient

ABSTRACT: An exact solution has been found to the problem of the diffraction of an obliquely incident monochromatic wave of sound by apertures regularly spaced on a screen of finite thickness. An infinite system of linear algebraic equations was constructed by expanding the solution in eigenfunctions. The expansion coefficients were determined by the solution of this system. Formulas were derived for sound reflection and sound transmission coefficients. These formulas were used to solve certain problems involving the diffraction of waves by a grating consisting of parallel and coplanar strips. Orig. art. has: 5 figures and 16 formulas.

Card 1/2

Card 2/2

L 30281-66 EWP(m)/EWT(1)/ETC/EPF(n)-2/T/EWP(t)/ETI IJP(c) JD/WW/JG

ACC NR: AP6008000 SOURCE CODE: UR/0046/66/012/001/0098/0104

67
B

AUTHOR: Shenderov, Ye. L. (Leningrad)

ORG: none

TITLE: The band emission of sound into a moving medium

SOURCE: Akusticheskiy zhurnal, v. 12, no. 1, 1966, 98-104

TOPIC TAGS: fluid flow, sound propagation, traveling wave

ABSTRACT: The author investigates the emission of sound by a piston with a prescribed arbitrary distribution of the oscillation velocity on its surface into a moving fluid. The solution is achieved by the Fourier integral method. As examples, the author studies cases of the uniform distribution of the oscillating velocity and distribution in the form of a traveling wave. It is shown that in certain cases the fluid flow even at relatively low velocities may substantially alter the field studied. In conclusion, the author expresses his gratitude to L.M. Lyamshev for a discussion of the present work and useful advice. Orig. art. has: 17 formulas and 2 figures.

SUB CODE: 20 / SUBM DATE: 29Jul64 / ORIG REF: 005 / OTH REF: 004

UDC: 534.874.2

Card 1/1

L 07874-67

ACC NR: AP6029541

2

efficient of sound transmission through the plate. By increasing the plate thickness, p is lowered since $B(\theta)$ decreases. A more general result, applicable to plates of arbitrary thickness, was obtained from the theorem of reciprocity. A spherical wave was assumed to fall on a plate surface for the condition $kR_0 \gg 1$. The plate transparency was directly proportional to its sound transmission. Calculations of pressure were also made for arbitrary boundary inhomogeneity in a plate. Both p and B were related to $v_0(r)$, the oscillation velocity of a descending surface wave of unit amplitude. Loading randomness was determined from the correlation function $f^{-2} K_f(r,r')$. An equation was derived for the mean square of the pressure, which showed that inhomogeneities in plates such as stiff ribs or supports decreased the coefficient of sound transmission throughout the plate. Similar results could be obtained for curved shells using the theorem of reciprocity. Orig. art. has: 1 figure, 8 formulas.

SUB CODE: 20,12/ SUBM DATE: 08Feb66/ ORIG REF: 004

Card 2/2 bc

SOV/137-57-10-20276

Translation from: Referativnyy zhurnal, Metallurgiya, 1957, Nr 10, p 268 (USSR)

AUTHOR: Shenderov, Z.L.

TITLE: Effect of Heat Treatment on the Properties of EI496 Steel (Vliyaniye termicheskoy obrabotki na svoystva stali marki EI 496)

PERIODICAL: Sb. tr. Ufimsk. neft. in-ta, 1956, Nr 1, pp 171-179

ABSTRACT: An investigation is made into the influence of the temperature of heating at 50°C intervals in the 600-1200° range, with holding for 1 min per mm thickness, and also of normalization and tempering (300-800°, with holding for 2 hours and cooling in the air) upon the mechanical properties (σ_b, σ_s, a_k, and H_B) and microstructure of mild Cr sheet steel (C 0.07-0.08%; Cr 12.48-12.61%). It is found that mechanical properties do not vary after heating to 850°. Starting at the 850-900° temperature range, a growth in σ_b and H_B and a diminution in δ and a_k occurs. Martensite sectors appear in the structure. Heating to 1150-1200° results in pronounced grain growth. Tempering at 500° after normalization from 1000° has little effect upon change in σ_b, δ, and H_B. Minimum a_k is observed upon

Card 1/2

SOV/137-57-10-20276

Effect of Heat Treatment on the Properties of EI496 Steel

tempering at 450-550°. Starting at a 550° tempering temperature, σ_b and H_B diminish and δ and a_k increase. Prolonged heating (up to 5000 hours) at 300-520° does not result in any significant changes in the mechanical properties of EI496 steel.

N.K.

Card 2/2

SHENDEROV, Z.L., kand. tekhn. nauk (Ufa).

Using aluminum alloys in manufacturing petroleum industry apparatus and equipment. Stroi. pred. neft. prom. 3 no.4:4-5 Ap '58.
(Petroleum industry--Equipment and supplies)(MIRA 11:5)
(Aluminum alloys)

SHINDEROV, Z.I., kand.tekhn.nauk

Use of a bimetal in petroleum refining and chemical apparatus. Khim. mashinostr. no.3:32-33 My-Je '64. (MIRA 18:1)

POLOVINKINA, Yu.Ir.; SHENDEROVA, A.G.

More on the age interrelationships of the Krivoy Rog metamorphic stratum and plagioclastic granite. Mat. VSEGEI. Petr. i min. no.1: 138-143 '55. (MLRA 8:6)
(Krivoy Rog--Geology, Stratigraphic)

SHENDEROVA, A.G.

Chromium containing dravite of the Krivoy Rog region. Min.sbor.no.9: 324-326 '55. (MLRA 9:9)

1.Leningrad. Vsesoyuznyy nauchno-issledovatel'skiy geologicheskiy institut Ministerstva geologii.
(Krivoy Rog region--Dravite)

USSR/Cosmochemistry - Geochemistry. Hydrochemistry, b

Abst Journal: Referat Zhur - Khimiya, No 1, 1957, 726

Author: Shenderova, A. G.

Institution: All-Union Geological Science-Research Institute

Title: Chloritoid in Rocks of the Krivyy Rog Formation

Original Periodical: Materialy Vses. n.-i. geol. in-ta, 1956, No 8, 133-140

Abstract: Continuing the work on the study of the chemical and mineralogical composition of chloritoid in metamorphic schists in the Krivyy Rog area (V. Ye. Tarasenko, Concerning Certain Crystalline Schists in the Krivyy Rog Mining District, Voronezh, 1923), the author describes this mineral obtained from the pit imeni Frunze. Chemical, spectroscopic, optical, thermal, and X-ray spectroscopic methods were used in the analysis. Chemical composition (in percent): SiO_2, 29.98; TiO_2, 0.34; Al_2O_3, 34.70; Fe_2O_3, 2.02; FeO, 22.87; MnO, 0.23; MgO, 2.58; CaO, 0.35; Na_2O, 0.15; H_2O^+, 7.15; H_2O^-, 0.18; total, 100.35.

Card 1/2

USSR/Cosmochemistry - Geochemistry. Hydrochemistry, D

Abst Journal: Referat Zhur - Khimiya, No 1, 1957, 728

Abstract: Formula: $(Fe^{2+}_{0.6}Mg_{0.35})_{0.95}(Fe^{3+}_{0.1}Al_{1.8})_{1.9}[OH]_2 \cdot [Al_{1.55}Si_{2.45}O_{10}]Fe[OH]_{1.9}$. Spectroscopic analysis showed traces of Ge and Ga. Sp. gr., 3.43. Associated minerals: chlorites, sericite, quartz, tourmaline, muscovite, both accessory and ores. Chloritoid is formed by the combination of two processes, metamorphic and hydrothermal. Secondary alterations are represented chiefly by the replacement of thuringite.

Card 2/2

SHENDEROVA, A.G.

Pre-Cambrian keratophyre-spilite formation in the Dnieper Valley. (MIRA 11:7)
Mat. VSEGEI no. 21:48-55 '57.
(Dnieper Valley--Petrology)

BARDINOVA, I.I.; PLEKHANOVA, V.G.; PALEYEVA, M.A.; SHENDEROVA, L.V.

Causes of a decrease in redox potential in cultures of microorganisms. Mikrobiologiia 32 no.6:954-960 N-D '63 (MIRA 18:1)

1. Biologo-pochvennyy fakul'tet Moskovskogo gosudarstvennogo universiteta imeni M.V. Lomonosova.

SHENDEROVA, R. I.

5

3

Mechanism of the reaction of alkylation of benzene by olefins in the presence of aluminum chloride. M. A. Dalin, P. I. Markosov, and R. I. Shenderova. *Voprosy Khim. Kineliki, Kataliza i Reaktsionnoi Spposobnosti, Akad. Nauk S.S.S.R., Otdel. Khim. Nauk* 1955, 617–29.—Reaction of $AlCl_3$ with RPh in the presence of HCl, and with C_6H_6 in the presence of olefins, leads to formation of complexes, the decompn. of which with H_2O yields alkylated products. Under similar conditions, reaction of C_6H_6 with $AlCl_3$ in the presence of HCl does not form a complex, and under high temp. conditions there are formed substances which on hydrolysis yield tars. Thus, complex formation occurs by exchange of proton for a radical of alkyl type. The proportion of mono-, di- and polyalkylated derivs. in the complex depends on the compn. of the reaction mixt., indicating an equil. between the components used and the complex formed. The org. part of the complex is a mixt. of alkylated benzenes, and not merely the trialkylated material. Alkylation of C_6H_6 with propylene proceeds in 2 stages: addn. of olefin to the complex and exchange of the hydrocarbon fragment of the complex with the reactants. None of the existing theories cover the alkylation reaction in its complexity.

G. M. Kosolapoff

Chem

DALIN, Mark Aleksandrovich; MARKOSOV, Petr Ivanovich; SHENDEROVA, Roza Isaakovna; PROKOV'YEVA, Tat'yana Vladimirovna; SHENASTINA, Ye.V. red.; SHPAK, Ye.G., tekhn.red.

[Alkylation of benzene by olefins] Alkilirovanie benzola olefinami. Moskva, Gos.nauchno-tekhn.izd-vo khim.lit-ry, 1957. 117 p.
(Olefins) (Alkylation) (Benzene) (MIRA 11:2)

DALIN, M.A.; SHENDEROVA, R.I.; VEDENEYEVA, L.Ya.; PIS'MAN, I.I.

Polymerization of ethylene on a chromium catalyst. Dokl. AN Azerb. SSR 14 no.12:991-996 '58. (MIRA 12:1)

1.Predstavleno akademikom AN Azerb. SSR M.F. Nagiyevym.
(Ethylene) (Polymerization)

DALIN, M.A.; SHENDEROVA, R.I.

Purification of ethyl alcohol obtained by direct hydration of ethylene. Khim.prom. no.4:275-277 Je '60. (MIRA 13:8)

(Ethyl alcohol) (Ethylene)

DALIN, M.A., akademik; VEDENEYEVA, L.Ya.; SHENDEROVA, R.I.

Polymerization of ethylene on a chromium oxide catalyst.
Dokl.AN SSSR 133 no.1:182-185 Jl '60. (MIRA 13:7)

1. Akademiya nauk AzerbSSR (for Dalin).
(Ethylene) (Polymerization)

S/081/62/000/004/086/087
B102/B101

AUTHORS: Dalin, M. A., Shenderova, R. I., Pis'man, I. I., Bakhshi-zade, A. A., Vedeneyeva, L. Ya., Buniyat-zade, A. A.

TITLE: Synthesis of polyethylene and of copolymers of ethylene with propylene and α-butylene on an chromium oxide catalyst

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 4, 1962, 669, abstract 4R128 (Azerb. khim. zh., no. 1, 1961, 17 - 22)

TEXT: Purification of ethylene (I) was carried out on a pilot-plant scale allowing for an increase in efficiency of the oxide-chromium oxide catalyst (COC) up to 176 - 250 g/g when I is polymerized in extraction benzine purified with sulfuric-acid, or in cyclohexane (120 - 130°C, 3 - 5 hrs, 45 at, COC concentration 0.13 - 0.25%). When ethylene is co-polymerized with propylene (II) (6.7 - 15% by volume) (110 - 120°C, 40 at) in benzine in the presence of an CaC_2 activator (20% of the catalyst's weight), the efficiency of the COC is reduced to 68 - 135 g/g owing to the lower reactivity of II and to its incomplete purification. The copolymer

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APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001549110001-9"

L 2403-67 EWT(m)/EWP(j) WW

ACC NR: AT6011841 SOURCE CODE: UR/0249/65/021/006/0022/0025

AUTHOR: Dalin, M. A.; Mekhtiyev, S. I.; Shenderova, R. I.; Rasulbekova, T. I.

ORG: Institute of Petrochemical Processes (Institut neftekhimicheskikh protsessov)

TITLE: Synthesis of methacrylonitrile, using new catalysts

SOURCE: AN AzerbSSR. Doklady, v. 21, no. 6, 1965, 22-25

TOPIC TAGS: organic synthetic process, resin, ACRYLONITRILE

ABSTRACT: The article describes the continuation of the author's work on this analysis, published in Doklady AN SSSR, 1964, vol. 1, no. 4, p 154. Two catalysts, no. 101 and no. 2, were tried, using the optimal conditions of synthesis (420C, 3 sec contact time, and mole ratio equal 1:2:2.5;(1:3) for iso-C_4H_8:NH_3:O_2:H_2O). With no. 101, the selectivity of the process increased to 60%, conversion of iso-butylene to 85-90%, and the yield of methacrylonitrile reached 51-54%. The results, using no.2, are tabulated. An infrared spectrum of methacrylonitrile is given. Orig. art. has: 3 fig. and 1 table.

Card 1/2

L 08903-67

ACC NR: AP6011841

Table 1.

Conversion, %			yield of the basic products in weight% calculated with respect to the iso-C_4H_8 reacted					
iso-C_4H_8	NH_3	O_2	MN	AN	HCN	CH_3CN	CO_2	Total
79,8	95,5	—	67,5	—	7,43	10,8	10,3	96,0
88,8	—	96,2	69,2	1,5	7,36	15,9	6,0	100
89	—	94,4	71,2	1,0	8,36	10,1	7,3	97,9

SUB CODE: 11/ SUBM DATE: 18Nov64/ ORIG REF: 001/ OTH REF: 006

Card 2/2

SHENDEROVA, R.I.; VITRINSKAYA, A.M.

Effect of serum from immunized guinea pigs on the reproduction and catalytic activity of Mycobacterium tuberculosis. Biul. eksp.biol.i med. 54 no.11:68-71 N '62. (MIRA 15:12)

1. Iz laboratorii biokhimii (zav. - kand.biologicheskikh nauk A.M.Vitrinskaya) Leningradskogo nauchno-issledovatel'skogo instituta tuberkuleza (dir. - prof. A.D.Semenov). Predstavlena akademikom V.N.Chernigovskim.
(MYCOBACTERIUM TUBERCULOSIS)(SERUM)

DAMIN, M.A.; MEKHTIYEV, S.I.; SHENDEROVA, R.I.; RASULBEKOVA, T.I.

Synthesis of methacrylic acid nitrile in the presence of new catalysts. Dokl. AN Azerb. SSR 21 no.6:22-25 '65.
(MIRA 18:12)

1. Institut neftekhimicheskikh protsessov AN AzSSR.

[illegible] A.I., [illegible], A.M.

Effect of the thermal factor on [illegible] activity of the [illegible] and catalase activity of the [illegible]. Fiziol.zhur.SSSR im.I.M.Sechenova 58 no.10:[illegible] [illegible].

(MIRA [illegible])

1. Laboratoriya biokhimii (zav. - kand.[illegible] A.M.[illegible]) [illegible] nauchno-issledovatel'skogo [illegible] (dir. - prof. A.I.[illegible]). Submitted [illegible], 1961.

SHENDEROVA, R.L.; FAKTOROVICH, A.M.

Examples of uses of conveyers in foreign mines. Gor.zhur. no.3:62-63 Mr '60. (MIRA 14:5)

1. Leningradskiy gornyy institut.
(Conveying machinery)

MIKHEYEVA, V.

Problem of gliopfschizophrenia. Report No. 1. Zhur. nevr. i psikh. 64 no.6:890-895 '64. (MIRA 17:12)

1. Klinika shizofrenii (zaveduyushchiy F. . Vedyakrev) Institut psikhiatrii AMN SSSR, Moskva.

SHENDEROVA, V.L.

Pirop.fachizophrenia. Report No.2. Zhur. nevr. i psikh. 65 no.2: 256-262 '65. (MIRA 18:9)

1. Klinika shizofrenii (zaveduyushchiy R.A. Nadzharov) Instituta psikhiatrii AMN SSSR, Moskva.

SHUMYEMOVA, Ye.F.

Treatment of fractures of the metatarsus. Vop. travm. i ortop. [illegible] (MIRA 18:2)

1. Irkutskiy gosudarstvennyy nauchno-issledovatel'skiy institut travmatologii i ortopedii.

SHENDEROVICH, A.

Columbus sailed to India but discovered America. Izobr.i rats. no.5:27 My '62. (MIRA 15:5)
(Electric locomotives--Technological innovations)

FEL'DMAN, Lev Davidovich; SHENDEROVICH, A.M., red.; LARIONOV, G.Ye., tekhn. red.

[Television and its operation; television circuit] Kak rabotaet televizor; skhemnye osobennosti televizorov. Moskva, Gos. energ.izd-vo, 164 p. (Massovaia radiobiblioteka, no.405) (MIRA 14:11)
(Television)

SHENDEROVICH, O.M.

27952
S/185/60/005/004/012/021
D274/D306

9.3275

AUTHORS: Smyrnov, S.O. and Shenderovych, O.M.

TITLE: Spontaneous breakdowns of air spark gaps

PERIODICAL: Ukrayins'kyy fizychnyy zhurnal, v. 5, no. 4, 1960, 540-548

TEXT: The effect of spontaneous (uncontrolled) breakdowns in the operation of pulse modulators is considered, as well as the mechanism which leads to the appearance of such breakdowns. First, the faults are considered which occur in a pulse modulator as a result of spontaneous breakdowns during the discharge period. The pulse modulator works on resonance-charge of pulse-forming line, supplied by a d.c.-source. An analysis of formulas relating to the charge, and of oscillograms of charge voltage and current showed that spontaneous breakdowns cause many faults in the operation of modulators, even if the number of the breakdowns is small. A single spontaneous breakdown may lead to: a) an excess voltage of 30% (and above) at

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Spontaneous breakdowns...

the pulse forming line, the load and the pulse transformer; b) unstable processes in the charging circuit (e.g. pulses of reduced amplitude); with large Q-factors, the stabilization time may reach tens of periods; this applies to circuits without cut-off diodes; in circuits with cut-off diodes, stabilization is reached after the maximum voltage has been attained; c) lighting of a d.c.-arc; due to the arc, the modulator may be cut off every 3-4 minutes, i.e. it would be practically impossible to use it; d) arbitrary increases in frequency; e) the appearance of further spontaneous breakdowns with all its consequences. The operation of the modulator is most unfavorably affected by a spontaneous breakdown which occurs towards the middle of the charging period. The use of cut-off diodes stabilizes the work of the charging circuit after a spontaneous breakdown, but excess voltages become more likely. The majority of defects due to spontaneous breakdowns can be found with difficulty only. In many cases load breakdowns may be the result of excess voltages during spontaneous breakdowns. By charging the forming line through a resistor, the majority of these faults (in-

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Spontaneous breakdowns...

stability, excess voltage, etc.) do not occur; the faults that still occur are the lighting of the d.c.-arc and the arbitrary frequency-increase. On mechanism leading to spontaneous breakdowns, a figure is given illustrating the appearance of spontaneous breakdown for the case of resonance- and of exponential charging. In practice it is very important to determine the maximum field strength E_1 in the discharge gaps, for which the number of spontaneous breakdowns becomes insignificant and their appearance is not harmful. A table is given with values of E_1 for commutation currents of 1250-3300 amp; for comparison, values of E are given for which spontaneous breakdowns occur in every period. It was found that (with resonance-charging), spontaneous breakdowns are most likely to occur towards the end of the charging period, notwithstanding the fact that the current density is largest then. In the case of exponential charging, the breakdowns are most likely to occur towards the middle of the charging period. Spontaneous breakdowns may lead to a smaller number of defects in the case of exponential charging (than it would in case of resonance charging). Nevertheless, the other advantages

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Spontaneous breakdowns...

of resonance charging prevail even if spontaneous breakdowns occur. The value of E_1 which is one of the chief characteristics of dischargers, ought to be determined in each concrete case depending on the permissible number of spontaneous breakdowns. In this connection, the following suggestions are made with regard to the design of dischargers: 1) In order to reduce energy losses by ventilation and to increase efficiency, the discharger should have a minimum number of gaps at high-voltage during the charging period. 2) The field strength in the gaps which are at high voltage should be chosen as small as possible; this reduces the likelihood of appearance of spontaneous breakdowns with small losses of energy through ventilation. There are 8 figures, 2 tables and 4 references: 3 Soviet-bloc and 1 non-Soviet-bloc. The reference to the English-language publication reads as follows: E.L. Ginzton, W.W. Hansen, R.L. Kyhl, R.B. Neal, W.K. Panofsky and the Staff, Stanfordskyy lineynyy uskoritel' elektronov (model 3), Rev. Sci. Instr., 1955, 26, no. 2, p. 134.

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S/185/60/005/004/012/021
D274/D306

Spontaneous breakdowns...

ASSOCIATION: Fizyko-tekhnichnyy instytut AN USSR (Physicotechnical Institute AS UkrSSR)

SUBMITTED: December 23, 1959

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27190

S/056/61/041/002/011/028
B102/B205

21,6000

AUTHORS: Grishayev, I. A., Shenderovich, A. M.

TITLE: The problem of errors due to the "dead" time of counters operating in conjunction with pulsed sources

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 41, no. 2(8), 1961, 410-416

TEXT: Theoretical problems of the counting-loss determination in counters whose dead time is shorter than the interval between the pulses have been studied earlier. This condition is, however, not always fulfilled in practice. In cyclic accelerators, for example, the pulsation frequency of the beam is equal to the period of revolution ($\sim 10^{-8}$ sec), whereas the dead time of most detectors is longer than 10^{-8} sec. The dead time may even become very great compared to the pulsation frequency as, e. g., in traveling-wave lineacs when using generators of the 10-cm range (period: $3 \cdot 10^{-10}$ sec). It is, therefore, important to examine the statistical

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conditions in the general case at any relation between dead time and pulse interval, and to calculate the mean number and the spread of the number of counting losses. This was the aim of the authors. They assumed that: 1) the pulse-repetition frequency f and the dead time τ are constant and not subjected to any fluctuations; 2) the distribution of the number of particles incident upon the counter obeys the Poisson law; 3) $n = f\int_0^{t_u} \eta(t)dt$, where $\eta(t)$ denotes the intensity (mean number of pulses per sec). If T is the time of experiment, then nT particles will incide on the counter, and $nT = \overline{M} + \overline{L}$, where $\overline{M}$ is the mean number of counts, and $\overline{L}$ is the mean number of counting losses. The spreads are denoted by D_M and D_L, respectively, and the pulse duty factor is assumed to be greater than 2. Results: 1) τ is smaller than the interval between two pulses; $t_u \gg \tau$, $nQ\tau \ll 1$: $\overline{M} = nT(1-nQ\tau)$; $D_M = nT(1-3nQ\tau)$, $D_L = \overline{L} = n^2QT\tau$. $t_u < \tau$:

$$\overline{M} = fT\{1 - e^{-n/f}\}, \qquad D_M = fTe^{-n/f}\{1 - e^{-n/f}\},$$
$$D_L = fT\{n/f + e^{-n/f} - e^{-2n/f} - ne^{-n/f}/f\}. \tag{6}$$

$f \gg n$: $\overline{M} = nT(1-n/2f)$, $D_M = nT(1-n/f)$, $D_L = \overline{L} = n^2T/2f$. 2) τ is greater than the interval between two pulses. Using Shiff's formula $M = fT\int_0^{t_u} \eta(t)\exp\left\{-\int_{t-T}^{t} r(t')dt'\right\}dt$, the following formulas are obtained for the mean counting losses for the three cases illustrated in Fig. 1:

$$\overline{M} = fTe^{-\lambda n/f}\left\{e^{-n/f}\int_0^{t_u-t_1} \eta(t)\exp\left[\int_t^{t+t_1} \eta(t')\,dt'\right]dt - e^{-n/f} + \exp\left[-\int_0^{t_u-t_1} \eta(t)\,dt\right]\right\}. \tag{13a}$$

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The problem of errors due to the "dead"

$$\overline{M} = fTe^{-(\lambda+1)n/f}\left\{1 - \exp\left[-\int_0^{t_2} \eta(t)\,dt\right] + \int_{t_2}^{t_u} \eta(t) \exp\left[-\int_{t-t_2}^{t} \eta(t')\,dt'\right] dt\right\}, \quad (13b)$$

$$\overline{M} = fTe^{-\lambda n/f}\{1 - e^{-r/f}\}. \quad (13c)$$

If $f \gg n$, these formulas can be reduced to

$$\overline{M} = nTe^{-\lambda n/f}\left\{1 + n\left(a_1 - \frac{1}{2} - b_1 + b_1^2/2\right)/f\right\},$$

$$\overline{M} = nTe^{-(\lambda+1)n/f}\{1 - n(a_2 + b_2^2/2)/f\}, \quad (16a)$$

$$\overline{M} = nTe^{-\lambda n/f}\{1 - n/2f\}, \quad (16b)$$

$$a_1 = \left(\frac{f}{n}\right)^2 \int_0^{t_u - t_1} \eta(t) \left[\int_t^{t+t_1} \eta(t')\,dt'\right] dt, \quad b_1 = \frac{f}{n}\int_0^{t_u - t_1} \eta(t)\,dt, \quad (16c)$$

$$a_2 = \left(\frac{f}{n}\right)^2 \int_{t_2}^{t_u} \eta(t) \left[\int_{t-t_2}^{t} \eta(t')\,dt'\right] dt, \quad b_2 = \frac{f}{n}\int_0^{t_2} \eta(t)\,dt. \quad (17)$$

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The problem of errors due to the "dead" ... B102/B205

a_i and b_i are not greater than unity. The spread is given by $D_M = nT/(1+\lambda n/f)^3 = nT(1-3\lambda n/f)$. An analysis shows that the counting losses due to the dead time depend largely on the relation between τ, f, and the pulse duration. In general, the counting losses decrease with increasing f and decreasing pulse duration, the mean intensity remaining unchanged. If the counting losses for $t_u \gg \tau$ increase by a factor of Q, as compared to the case with constant intensity (in many cases, Q reaches values of the order of some ten thousand), then the counting losses for $t_u \sim \tau$ will deviate only slightly from those found at constant intensity. If $f\tau \gg 1$, they do not differ any longer, and all statistical relations are the same for both cases. They also remain unchanged if the condition $f\tau \gg 1$ is not fulfilled, and τ is an integral multiple of the number of periods. The results obtained here indicate that the h-f pulsation of the beam in lineacs has no influence on experimental errors due to the dead time. There are 2 figures and 7 references: 3 Soviet and 4 non-Soviet. The two most important references to English-language publications read as follows: L. Chu, W. Hansen. J. App. Phys. 18, 996, 1947; L. J. Shiff. Phys. Rev. 50,

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27190

S/056/61/041/002/011/028
B102/B205

The problem of errors due to the "dead"

88, 1936.

ASSOCIATION: Fiziko-tekhnicheskiy institut Akademii nauk Ukrainskoy SSR (Institute of Physics and Technology of the Academy of Sciences Ukrainskaya SSR)

SUBMITTED: January 27, 1961

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1.1210 only 3108, 3028

26.2310

32647
S/105/62/000/001/004/006
E194/E455

AUTHORS: Smirnov, S.A., Shenderovich, A.M., (Khar'kov)

TITLE: Controlled spark gaps

PERIODICAL: Elektrichestvo, no.1, 1962, 52-54

TEXT: This article describes controlled spark gaps which are specially suitable for controlling high-power high-voltage impulses, because they are not subject to uncontrolled operation resulting from high electrical stress in the gap during intervals between operations. A two-electrode gap is triggered by applying to the normally grounded electrode a voltage of appropriate polarity from a saturating impulse transformer. The impulse transformer is supplied by a trigatron circuit. The duration of impulse given by the equipment depends on the inductance of the transformer and to reduce this the transformer core is saturated when the triggering current passes. Then, if the core material has a square-shaped hysteresis loop, the gap can be used to form impulses with a duration of about 10 microseconds. Multiple-gap arrangements are required for shorter impulses. One circuit has a number of gaps with all electrodes earthed except one; each of the other electrodes has its own impulse

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Controlled spark gaps

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transformer supplied through capacitors from a single trigatron. The voltage applied to each electrode is of the same polarity, so initially only the first gap breaks down. This reverses the polarity of the second electrode so that the second gap breaks down and then all the auxiliary gaps break down in turn, including the last which is short. The correct sequence of breakdown is assisted by making the inter-electrode capacitances smaller than the capacitances to earth. The device can be used for a wide range of impulse voltages by altering the gap lengths, without affecting the triggering voltages or other characteristics. Fig.3 shows the circuit of an experimental triggered gap for impulse voltages of 15 to 50 kV and currents up to 2500 A with a duration of 3 microseconds at a recurrence frequency of 50 c/s. A multi-gap arrangement is described in which the triggering impulse is applied directly only to the second electrode. The auxiliary gap lengths are all the same and a capacitance voltage divider arrangement is used to distribute the trigger voltage between the auxiliary gaps. The electrodes are earthed through inductances of such a value that the auxiliary gaps do not break

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down before the main gap. After the main gap has broken down, the auxiliary gaps break down in turn. The circuit of an experimental device based on this principle is shown in Fig.5. The capacitor connected to the primary winding of the impulse transformer is of 2000 pf, $C_2 = 1.4C_1$ and $d_1 = 1.4d_2$. With recurrence frequencies up to 50 c/s the lower limit of main gap breakdown voltage was 18 to 20 kV; this value remained the same with C_2 in the range 10 pf to 140 pf, and with L in the range 3 to 15 microHenries. Formulae are given for calculating the gap lengths and other parameters. The spark gaps described can operate over a wide voltage range without adjustment of gap length. Uncontrolled breakdowns do not occur because when the device is not operating, voltage is applied only to the main gap, which is made big enough to withstand it. Gaps working on this principle can be developed for still higher currents. There are 5 figures and 11 references: 6 Soviet-bloc and 5 non-Soviet-bloc. The four references to English language publications read as follows:

Ref.1: Smart D.L., Proc. IEE, 1959, Suppl. no.2;
Ref.2: Ginzton E.L., Hansen W.W., Kyhl R.L., Neal R.B., Panofsky W.F. Rev. Scient. Instrum. 1955, no.2;

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S/105/62/000/001/004/006
E194/E455

Controlled spark gaps

Ref.4: Plasma engine verifies theory. Electronic, no.31, 1959;
Ref.7: Craggs, J.D., Haine M.E., Meek J.M. J. Instn. Electr. Eng. pt.IIIA, no.93, 1946.

SUBMITTED: November 25, 1960

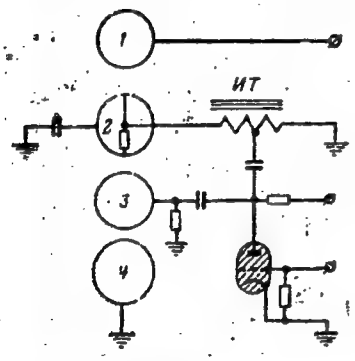

Рис. 3.

Fig.3.

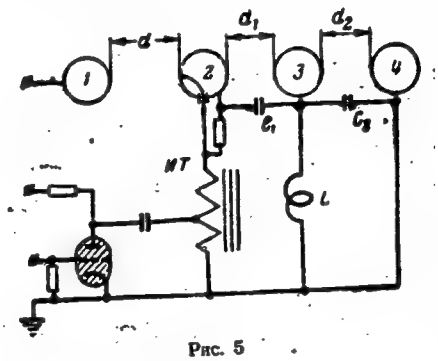

Рис. 5

Fig.5.

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39154
S/120/62/000/003/018/048
E192/E382

9.2590

AUTHORS: Auslender, V.L., Il'in, O.G. and Shenderovich, A.M.

TITLE: Generation of current pulses of variable duration

PERIODICAL: Pribory i tekhnika eksperimenta, no. 3, 1962, 81 - 83

TEXT: A method of generating current pulses of continuously variable duration by means of a delay line is described. The principle of the method is illustrated in Fig. 1. The forming line is charged from a voltage source U and it is terminated by a resistance R via a discharge device P_1 at one end and the load-resistance Z at the other end; R is equal to the wave impedance ρ of the line. The operation of the system is as follows. Assuming that the load Z (either ohmic or reactive) is small in comparison with ρ, the current flowing across Z when P_2 is conducting is approximately equal to U/ρ. This current flows until the instant when a negative current wave $U/2\rho$ of negative polarity reaches the load from the matched end of the line after triggering the device P_1.

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GRISHAYEV, I.A.; KHEYFETS, M.I.; SHENDEROVICH, A.M.

Errors in electron recording due to scattering on the walls of the donut and in the layer of air in front of the counters. Pribl. i tekh. eksp. 7 no.2:42-46 Mr-Ap '62. (MIRA 15:5)

1. Fiziko-tekhnicheskiy institut AN USSR.
(Electrons--Scattering) (Betatron)

35200
S/185/62/007/002/014/016
D299/D302

9.6150

AUTHOR: Shenderovich, O.M.

TITLE: Errors related to the "dead" time of a counter during fluctuations in source intensity

PERIODICAL: Ukrayins'kyy fizychnyy zhurnal, v. 7, no. 2, 1962, 221 - 223

TEXT: It is assumed that the change in intensity is a random process. First, the case of complete statistical independence between particle arrivals at the counter at arbitrarily small intervals of time, is considered. The probability that a particle arrives at the counter in a small interval of time dt, is

$$dp_n(t) = n(t)dt. \quad (1)$$

If n(t) is a random process, $dp_n(t)$ denotes conditional probability. The corresponding unconditional probability is

$$dp(t) = \sum_n q(n, t)ndt = \bar{n}(t)dt, \quad (2)$$

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where $q(n, t)$ and $\bar{n}(t)$ are the probability distribution and the mean intensity of the source at the moment t. The above assumptions (statistical independence and the validity of formula (2)), involve a Poisson distribution of the particles arriving at the counter. Hence in this case no statistical fluctuations of intensity are observed, and the pertinent formulas are similar to those, describing a determinate process. Further, the more general case is considered when the particle arrivals at the counter are correlated, but the duration of the correlation is much shorter than the "dead" time τ. It is assumed that the source is stationary (i.e. q does not depend on time). Formulas are derived which show that in this case, too, the statistical fluctuations in source intensity are not reflected in the error, due to the "dead" time. The same result applies also to pulse sources in the following cases: 1) The "dead" time is much larger than the period of repetition of the pulses; 2) The "dead" time is an integral multiple of the period; 3) The "dead" time is much shorter than a pulse, (provided the source is stationary with respect to the individual pulse). The obtained results apply also to the case of small loads, which is of considerable interest in

Errors related to the "dead" time ... S/185/62/007/002/014/018
D299/D302

practice. There are 6 references: 3 Soviet-bloc and 3 non-Soviet-bloc (including 1 translation). The references to the English-language publications read as follows: L. Shiff, Phys. Rev., 50, 88, 1936; C.H. Westcott, Proc. Roy. Soc., A194, 508, 1948.

ASSOCIATION: Fizyko-tekhnichnyy instytut AN URSR (Physicotechnical Institute of the AS UkrSSR), Kharkiv

SUBMITTED: October 20, 1961

Card 3/3

AUSLENDER, V.L., ILIN, O.G., SHENDEROVICH, A.M.

"Forming impulses in variable loading."

"Forming impulse currents of regular duration."

"Selection of optimal conditions for electric lead with energy of 100 MEV in acculmulation systems."

Reports submitted to the Intl. Conference on High Energy Physics and Nuclear Structure , Geneva, Switzerland 25 Feb-2 Mar 1963

SHENDEROVICH, A.M.

"Concerning questions of errors with "dead" time meters in the presence of counters."

Report submitted to the Intl. Conference on High Energy Physics and Nuclear Structure, Geneva, Switzerland 25 Feb - 2 Mar 1963

AUSLENDER, V.L., GRISHAYEV, I.A., ILIN, O.G., SHENDEROVICH, A.M.

"Arrangement for acculmulation electrical system with the energy of 100 MEV."

Report submitted to the Intl. Conf. on High Energy Physics and Nuclear Structure, Geneva, Switzerland 25 Feb - 2 Mar 1963

SHENDEROVICH, Abram Movshevich; STRIZHEVSKIY, N.Z., otv. rdd.; KONDRAT'YEVA, V.P., red.; CHURAKOVA, V.A., tekhn. red.

[Video amplifiers of television receivers] Usiliteli signalov izobrazheniia v televizionnom priemnike. Moskva, Sviaz'izdat, 1963. 79 p. (Biblioteka "Televizionnyi priem," no.9) (MIRA 17:3)

AUSLENDER, V.L.; IL'IN, O.G.; SHENDEROVICH, A.M.

Pulse formation in a variable load. Prib. i tekh. eksp. 8 no.2:173-174 Mr-Ap '63. (MIRA 16:4)

1. Fiziko-tekhnicheskiy institut AN UkrSSR.
(Pulse techniques (Electronics))

GRISHAYEV, I.A.; IL'IN, O.G.; SHENDEROVICH, A.M.

Formation of short magnetic field pulses in a ferrite magnet.
Prib. i tekh. eksp. 8 no.4:139-141 Jl-Ag '63. (MIRA 16:12)

1. Fiziko-tekhnicheskiy institut AN UkrSSR.

GRISHAYEV, I.A. [Hryshaiev, I.O.]; IL'IN, O.G. [Il'in, O.H.]; SHENDEROVICH, A.M. [Shenderovych, O.M.]

Formation of short-front pulses of a magnetic field in inflector and deflector devices. Part 1. Ukr. fiz. zhur. 8 no.8:861-868 Ag '63.

Formation of short-front pulses of a magnetic field in inflector and deflector devices. Part 2. 869-876 (MIRA 16:11)

1. Fiziko-tekhnicheskiy institut AN UkrSSR, Khar'kov.

SHENDEROVICH, A.M. [Shenderovych, O.M.]

Problem of errors related to the "dead" time of counters in the presence of a background. Ukr. fiz. zhur. 8 no.12:1313-1322 D '63. (MIRA 17:4)

1. Fiziko-tekhnicheskiy institut AN UkrSSR, Khar'kov.

FEL'DMAN, Lev Davidovich; SHENDEROVICH, A.M., red.

[How a television receiver operates; circuitry of television receivers] Kak rabotaet televizor; skhemnye osobennosti televizorov. Izd.2. Moskva, Izd-vo "Energiia," 1964. 172 p. (Massovaia radiobiblioteka, no.503) (MIRA 17:4)

ACCESSION NR: AP4039583 S/0185/64/009/005/0569/0570

AUTHOR: Shenderovy*ch, O. M.

TITLE: Propagation of electromagnetic waves in pulsed magnets with ferromagnetic cores (brief communication)

SOURCE: Ukrayins'ky*y fizy*chny*y zhurnal, v. 9, no. 5, 1964, 569-570

TOPIC TAGS: pulsed magnet, electromagnetic wave propagation, inflector magnet, deflector magnet, accelerator, electromagnet, Maxwell equation, magnet air gap, magnetic field fringing, magnet pole piece, particle accelerator

ABSTRACT: Pulsed magnets are used to inject and to extract particle beams from accelerators. These magnets may be made with or without ferromagnetic materials. The characteristics of propagation of electromagnetic (EM) waves in these magnets, in particular, the field distributions, must be known if the effectiveness of the magnet is to be assessed. In two papers which describe ferrite inflectors (B. Kuiper, G. Plass, Sci. Rept. Cern. N 30, 1959;

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ACCESSION NR: AP4039583

G. K. O'Neil, E. J. Woods, Phys. Rev. 115, 659, 1959) this information is not given. Calculations are performed for the system illustrated in Fig. 1 of the Enclosure. It is found that for wavelengths (in the spectra of the EM pulses) much greater than the characteristic dimension of the air gap, and for a sufficiently large magnetic permeability, μ, the TEM mode is propagated almost at the speed of light and with little distortion. "In conclusion the author expresses thanks to V. D. Tkachenko and O. O. Sharshanov for valuable advice and discussion of the results". Orig. art. has: 1 figure, 1 table, and 1 formula.

ASSOCIATION: Fizy*ko-Tekhnichny*y Insty*tut AN URSR, Kharkov (Physico-Technical Institute AN URSR)

SUBMITTED: 18Nov63 ATD PRESS: 3049 ENCL: 01

SUB CODE: EM, NP NO REF SOV: 004 OTHER: 006

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ACCESSION NR: AP4039583

ENCLOSURE: 01

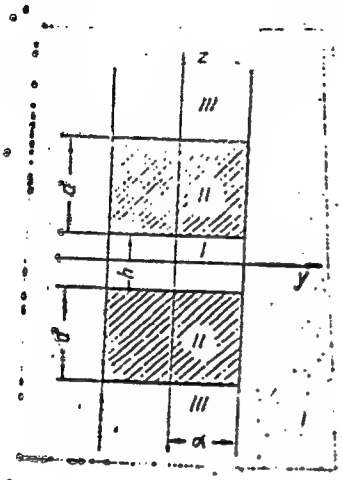

Fig. 1. Sketch of the model for calculations. The waves are propagated between two ideal conducting planes $y = a$, and $y = -a$ along the x-axis (perpendicular to the plane of the figure)

I, II - regions where $\varepsilon = \mu = 1$
II - regions filled with a lossless magnetic material ($\varepsilon > 1$, $\mu > 1$).

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ACCESSION NR: AP4035703 S/0057/64/034/005/0896/0905

AUTHOR: Il'in, O.G.; Shenderovich, A.M.

TITLE: Investigation of the characteristics of pulsed magnets with ferromagnetic cores

SOURCE: Zhurnal tekhnicheskoy fiziki, v.34, no.5, 1964, 896-905

TOPIC TAGS: electromagnet, pulsed magnet, magnetic field, particle accelerator component

ABSTRACT: The magnetic field configuration of a number of two-turn pulsed electromagnets with ferrite cores was investigated experimentally in order to obtain data for the design of pulsed magnets such as are employed as deflectors or inflectors in particle accelerators. The geometry of the magnets investigated is illustrated in Fig.1 of the Enclosure. The magnets were excited with 0.2 microsec pulses having peak currents up to 500 A. The fields were measured with a probe extending for 3 mm in the y and z directions (see Fig.1). An accuracy of 3% is claimed for relative measurements of field strength, but only 15% for the absolute values. The self-inductance of the magnets was measured, and the efficiency (ratio of magnetic field

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energy in the uniform portion of the field to total magnetic field energy) was calculated. Results are presented graphically and are discussed in some detail. The most advantageous configuration was found to be III (figure). When the external conductors were located farther from the gap, as in IV and V, the fringe field increased in magnitude and extent. When the conductors were brought inside the gap, as in II and I, the region of uniform field decreased in size, with a resulting decrease in efficiency. The least advantageous configuration V corresponds to that for which N.D.Coggeshall (J.Appl.Phys.18,855,1947) has published field strength calculations. These calculations are compared with experimental data from the present investigation and good agreement is found. Particular attention was given to configuration of type IV, because the resulting fields decrease on both sides of the uniform field region. The magnetic field is calculated for four conductors (two turns) located in the gap between two infinite plane-parallel slabs of magnetic material having infinite permeability. The calculated fringe field agreed with the measured field for type IV configuration, even though the outer conductors were rather close to the edge of the core. The calculations show that when the magnet gap is small compared with the separation between the conductors, the field configuration becomes approximately independent of the separation, and the efficiency approaches 100%. Orig. art.has: 11 formulas, 4 figures and 1 table.

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ASSOCIATION: none

SUBMITTED: 30Jan63 DATE ACQ: 20May64 ENCL: 01

SUB CODE: EE, EM NR REF SOV: 002 OTHER: 003

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ACCESSION NR: AP4035703 ENCLOSURE: 01

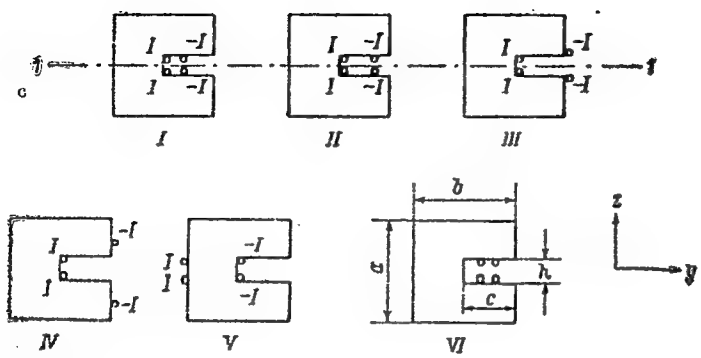

Fig.1. Magnet core and conductor configurations. Dimensions: a = 7 cm, b = 6 cm, c = 3 cm, h = 1 cm.

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AUTHOR: Il'in, O.G.; Shenderovich, A.M.

TITLE: Investigation of the characteristics of pulsed magnets

SOURCE: Zhurnal tekhnicheskoy fiziki, v.34, no.5, 1964, 906-910

TOPIC TAGS: electromagnet, pulsed magnet, iron-free magnet

ABSTRACT: The magnetic field of four parallel conductors (two turns) located in the gap between two infinite plane-parallel slabs of magnetic material having infinite permeability is calculated by the method of images. The configuration of the system is shown in Fig.1 of the Enclosure, which also shows the positions of the first few images. The calculated field is compared with the field of the four conductors in the absence of ferromagnetic material, and with the fields calculated by taking into account one, two, and three of the infinite sequence of reflections. The purpose of this comparison is to explore the possibility of employing several conductors located at the image positions to simulate in an iron-free system the field that would be obtained with a ferromagnetic core. It is found that the region throughout which the field is approximately uniform is nearly as large in the iron-free case

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employing only one or two reflections as in the presence of a ferromagnetic core, but that the fringe field is considerably greater even when three reflections (16 conductors) are included. The efficiency (ratio of the magnetic field energy in the uniform field region to the total magnetic field energy) is much less without a ferromagnetic core than with one. The magnetic fields obtained with cores of several different ferrite materials were measured by the method described in the preceding paper (O.G.Il'in and A.M.Shenderovich,ZhTF,34,No.5,896,1964). Core configuration III of that paper was employed. It was found that when the permeability of the core material was between 5 and 10, the self-inductance, maximum field strength, and efficiency were intermediate between those obtained with no core and with a core of high permeability material. Orig.art.has: 2 formulas, 4 figures and 1 table.

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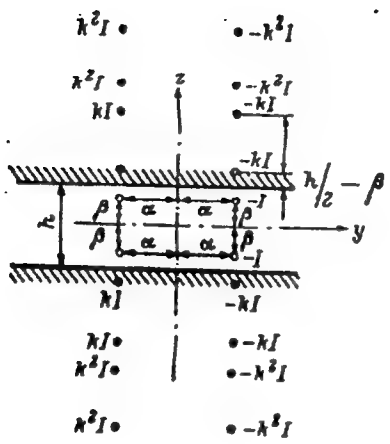

Fig.1. Configuration of conductors, magnetic material, and images.

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ACCESSION NR: AT5007922 S/0000/64/000/000/0295/0299

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B+1

AUTHOR: Val'ter, A. K.; Grigor'yev, Yu. N.; Dudkina, I. N.; Ivanov, V. F.; Il'in, O. G.; Koba, I. I.; Kondratenko, V. V.; Mocheshnikov, N. I.; Tarasenko, A. S.; Terekhov, B. A.; Tolstoy, A. Ye.; Shenderovich, A. M.; Grishayev, I. A.

TITLE: The apparatus of the Physicotechnical Institute, Academy of Sciences, Ukrainian SSR, for colliding electron beams with energies of 200 × 100 Mev for experiments on the scattering of electrons on electron

SOURCE: International Conference on High Energy Accelerators. Dubna, 1963. Trudy. Moscow, Atomizdat, 1964, 295-299

TOPIC TAGS: high energy accelerator, high energy plasma, particle beam, particle physics, charged particle beam

ABSTRACT: Work on colliding electron beams in the Physicotechnical Institute, Academy of Sciences, Ukrainian SSR, was begun in 1960. The existence of linear electron accelerators was basic for the initiation of such work. At the first stage, it was decided to stop at electron storage devices of 100 Mev energy, since it was found that even at such comparatively small energies of the colliding beams

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many problems can be solved. The most convenient storage design is a system of race-tracks with a common linear section in which the collision of the two beams is effected. A distinctive property of the Institute's storage device is the great lengths of the linear sections, equal to 50 and 60 cm for a radius of revolution of 50 cm. The great length of one pair of linear sections in each of the rings was selected in order to provide for measurement of the minimum angle of scattering. Selection of a small radius of revolution was due to the requirement of minimum equilibrium dimensions of the beam and to the tendency to have a not too long time for damping of the beam oscillations. To localize the region of interaction, the beam orbits are distorted in the vertical plane by means of two "intersecting" magnets that create a homogeneous field in the radial direction. The magnets are arranged in the common linear section. The length of each of the "intersecting" magnets equals 10 cm, and the magnetic field strength is up to 640 oersteds. The magnets deflect the equilibrium orbit by 1 cm from the median plane. The quadrants have a constant magnetic field index of $n = 0.425$. The coupled magnets in the section that is common for both orbits have zero gradient; the index in the remaining sections is $n_1 = 0.450$. The stability of the Institute's system is characterized by a diagram showing field index n in the quadrants versus the field index n_1 in the coupled magnets. The regions of stability and resonance lines of various

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orders are indicated in the diagram and discussed. The selected operating point is at a maximum distance from the resonances; in this case the frequencies of betatron radial and vertical (axial) oscillations are respectively equal to $\nu_r = 1.145$; $\nu_z = 0.6956$. The internal dimensions of the vacuum chamber were 100 × 40 mm. The determining problem here was the conditions governing the beam input into the storage device. The beam is fed to an inflector through a magnetic channel. The initial conditions are so chosen that the beam can by-pass in the first six revolutions the inflector set a distance of 2.25 cm from the equilibrium orbit. The behavior of the storage device in the first six revolutions is described. In case the trailing edge of the magnetic field pulse lasts for three revolutions of the particles in the storage device, the introduction of particles into the chamber can also be prolonged in the course of three revolutions. In order to capture particles in the storage device it is necessary to create with the help of inflector magnets a magnetic field strength of $H_I = 1900$ oersteds, $H_{II} = 2630$ oersteds. The system of tolerances is evaluated on the assumption of the following parameters for the input beam: width $a = 0.5$ cm, height $b = 0.3$ cm, angular divergence: radial $\Delta\gamma_r = 2 \cdot 10^{-3}$ and vertical $\Delta\gamma_z = 5 \cdot 10^{-4}$. Preliminary measurements indicate that this data can be realized in the case of the Institute's apparatus. The requirements on

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the stability of the magnetic field of the inflector are: $\Delta H_I/H_I = 10\%$, $\Delta H_{II}/H_{II} = 3\%$. Taking into consideration the indicated quantities, the maximum values of the curvature of the radial betatron oscillations will be equal respectively to $F_I = 2.8$ cm, $F_{II} = 4.1$ cm. According to computations, the equilibrium dimensions of the beam must be $a_z = 0.04$ cm; $a_r = 0.2$ cm. Due to the quantum fluctuations in synchrotron radiation, the longitudinal dimension of the particle bunch equals 40 cm for a gap voltage of about 1.5 kilovolts. The mean energy expended on an electron per revolution, taking into account the coherent radiation, is equal to 220 electron-volts. The time of oscillation damping amounts to 100 msec. Alternate injection of the beam of electrons in the ring is effected by three sector magnets with double focusing. The introduction of a beam turned away from the accelerator and with zero initial conditions is ensured by the application of a cylindrical magnetic shield with a shielding coefficient varied along the length. All the magnets are supplied with power from sources that have a current stability of at least 0.02%. The report also discusses the vacuum chamber, voltage generator, and a few other aspects of the apparatus. Orig. art. has: 5 figures, 2 tables.

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